

Patent claims

- 5 1. A method for pulse width modulated control of a plurality of load elements, the load elements being controlled in time staggered manner with respect to each other, **characterized in that,**
 - 10 - the load elements are controlled by a common control unit with a common system clock in phase staggered manner, and
 - 15 - for each load element an initial value and a final value is predetermined,
 - 20 - the initial values of the load elements diverge from each other,
 - 25 - the final values of the load elements are determined according to the pulse-break ratio and
 - 30 - each load element is supplied with current for the period of time between the respective initial and final value.
- 35 2. A method according to claim 1, **characterized in that** the load elements preferably are ohm resistive load elements in an electrically independent load circuit and are supplied from a common supply line, in particular from a motor vehicle supply system.
- 30 3. A method according to claim 1, **characterized in that** a common system clock in a common counter is counted up to a predetermined counter final value.
- 35 4. A method according to one of the preceding claims, **characterized in that** for different operating situations different phase shifts of the individual

load elements with respect each other are predetermined.

5. A method according to one of the preceding claims,
5 characterized in that at least one of the following
parameters is determined:

10 - number of load elements to be currently controlled, or
- pulse width of the load elements to be currently controlled or
- electrical power input or size proportional thereto of the load elements to be currently controlled with respect to each other or
15 - the harmonic content in the common supply line timed over the control of all load elements.

6. A method according to one of the preceding claims,
20 characterized in that illuminants, in particular lamps or LEDs, preferably in a motor vehicle, are controlled.

7. A control circuit for executing the method according to one of the preceding claims consisting of
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30 - a common system timer and
- a storage region for each load element, in which the pulse width and the phase position of the respective load element are stored.

8. A control circuit according to claim 7, characterized in that

35 - initial value and final value for the phase staggered pulse width modulated control are stored,

- a common counter, which counts the system clock up to a predetermined counter final value,
- for each load element a storage region, in which initial value and final value are stored for the phase staggered pulse width modulated control and
- for each load element a comparator and a switch, which compares the counter state with the initial and final value and dependent therefrom controls the switch in the electric circuit to the load element.

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9. A circuit arrangement according to claim 8, characterized in that a reset-input is provided at the counter, by which for all load elements the control can be jointly synchronized by resetting and restarting the counter.

10. A circuit arrangement according to one of claims 7 to 10 for executing a method according to claims 5 or 6, characterized in that

- a storage region is provided, in which for different operating situations different phase positions of the individual load elements with respect to each other are stored and
- means for recognizing the current operating situation and selection of the phase position assigned to the current operating situation are provided.

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11. A circuit arrangement according to claim 10, characterized in that a storage region is provided, in which a plurality of different phase positions of the individual load elements with respect to each other can be programmed via an interface.

12. A circuit arrangement according to one of the preceding claims, characterized in that a measurement arrangement is provided in the common supply line for detecting the harmonic content.